



Montana Department of
ENVIRONMENTAL QUALITY

WATER PROTECTION BUREAU

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DEQ/WPB
PERMITTING & COMPLIANCE DIV.

Agency Use

Permit No.: MTG010174

Date Rec'd 2/3/09

Amount Rec'd 0

Check No.

Rec'd By bs

FORM
NMP

Nutrient Management Plan

READ THIS BEFORE COMPLETING FORM: Before completing this form (Form NMP), Concentrated Animal Feeding Operation (CAFO) operators need to read the General Permit, particularly Part IV.A. CAFO operators also need to read the "Instructions For Filling Out Form NMP," found at the back of the Form. Form NMP is intended to help CAFO operators develop a site-specific Nutrient Management Plan, in compliance with Part IV.A of the General Permit and all applicable State rules and statutes. Your Nutrient Management Plan must be maintained at the site as required in Part III of the General Permit. Sections B and C on your Form NMP must state the information exactly the same way as it was stated on the most recently submitted version of your Form 2B. Attach additional pages as necessary, indicating the corresponding section number on this NMP form. For additional help in filling out this form please read the attached instructions. The 2008 General Permit, current fee schedule, and related forms are available from the Water Protection Bureau at (406) 444-3080 or <http://www.deq.mt.gov/wqinfo/MPDES/CAFO.asp>

Section A - NMP Status (Check one):

- ☒ New No prior NMP submitted for this site.
☐ Modification Change or update to existing NMP.

Permit Number: MT G010174 (Specify the permit number that was previously assigned to your facility.)

Section B - Facility or Site Information:

Site Name William Krutzfeldt, Solaris Feeders, LLC

Site Location Section 36, Township 8N, Range 47E, 1 mi East on Signal Butte Road

Nearest City or Town Miles City County Custer County

Section C - Applicant (Owner/Operator) Information:

Owner or Operator Name Solaris Feeders, LLC

Mailing Address RR1, Box 2690

City, State, and Zip Code Miles City, MT 59301

Phone Number 406-234-0200

Section D - NMP Minimum Elements:

1. Livestock Statistics		
<i>Animal Type and number of animals</i>	<i># of Days on Site (per year)</i>	<i>Annual Manure Production (tons, cu. yds. or gal)</i>
1. Beef Calf, can average 650lbs, can have 100 to 3,300 head	generally average 3300 head from Aug-May~300days	1,300-29,000 ton
2. in feedlot depending on customers and economy		
3. Finishing Steers or Heifer, can average #1100, can have 100 to 1,200	generally have heifers or steers 365 days year	2,800 to 11,000 ton
4. head depending on customers and economy		
5. Dry Cows or Bulls, can average #1,100, can have 10 to 50 head	generally have Cows or Bulls 365 days year	168-840 ton
6. depending on customers and economy		
7.		
8.		

Method used for estimating annual manure production:

DEQ 9, Table 1, part 2, page 13 and selected distribution of animal types based on analysis of headdays for 2008.

This distribution can change from year to year depending on weather, customers and the economy.

2. Manure Handling

Describe manure handling at the facility:

Manure is allowed to accumulate in the pen area for 4 to 8 months. Twice annually manure is scrapped from pen surface and either composted or compacted onto mounds within pens and confinement area.

Frequency of Manure Removal from confinement areas:

Composted manure is recomposted 3 times on average and can be applied to fields every 2-3 years depending on weather, crop rotation, and markets.

Is this manure temporarily stored in any location other than the confinement area? ☐ Yes ☒ No

If so then how and where?

Is manure stored on impervious surface? ☒ Yes ☐ No

If yes, describe type and characteristics of this surface:

Manure is stored on heavy clay soils within confinement area that is designed to drain to lagoons.

3. Waste Control Structures

<i>Waste Control Structure (name/type)</i>	<i>Length (ft)</i>	<i>Width (ft)</i>	<i>Depth (ft)</i>	<i>Volume (cubic ft or gallons)</i>
1. Storage Area 1(per topo map in appl)				22,810
2. Storage Area 2(per topo in appl)				661,396
3. Storage Area 3(per topo in appl)				68,429
4. Storage Area 4(per topo in appl)				45,619
5. Storage Area 5(per topo in appl)				1,010,138
6. Storage Area 6(per topo in appl)				5,018,105
7.				
8.				
9.				
10.				
11.				
12.				

4. Disposal of Dead Animals

Describe how dead animals are disposed of at this facility:

Carcasses are removed within 24 hours and are composted.

5. Clean Water Diversion Practices

Describe how clean water is diverted from production area:

The entire confinement area is ringed with a berm which is used to deflect the stormwater around the confinement area and into drainage areas.

6. Prohibiting Animals and Wastes from Contact with State Waters

Describe how animals and wastes are prohibited from direct contact with state waters:

No state waters are located with in the confinement facility.

Describe how chemicals and other contaminants are handled on-site:

A minimum of contaminants are stored at this facility. Bulk fuel is stored in overhead tanks with restricted entry by lockout. Miscellaneous oils or machine additives are stored within our shop building.

8. Best Management Practice (BMPS)

Describe in detail all temporary, permanent and structural Best Management Practices (BMPs) which will be used to control runoff of pollutants from facility's **production area**. Indicate the location of these measures. Include a schedule for implementation of each of these measures. Examples of BMP measures could include but are not limited to: constructing ditches, terraces, and waterways above an open lot to divert clean water run on; installing gutters, downspouts and buried conduits to divert roof drainage; providing more roofed area; decreasing open lot surface area; repairing or adjusting water systems to minimize water wastage; using practical amounts of water for cooling purposes; recycling water if practical and applicable.

* Clean water runoff above confinement facility is stored in reservoir to minimize the amount of diversion necessary.

* Clean water through a series of exisitng dikes and berms is diverted around the confinement area.

Within confinement area facility, solid waste is captured through a series of smaller settling ponds & leveling ditches thus minimizing the amount of solids ending up in the main storage area #6.

* All livestock waterers are on a float system rather than a continuous flow system. This minimizes waste water.

Describe in detail all temporary, permanent and structural Best Management Practices (BMPs) which will be used to control runoff of pollutants from facility's **land application area**. Indicate the location of these practices. If not already in use, include a schedule for implementation of each of these measures. Attached details and specifications may be used to supplement this description. Examples of BMP measures could include but are not limited to: maintaining setbacks from surface waters for manure applications; managing irrigation practices to prevent ponding of wastewater on land application sites; never spray irrigating wastes onto frozen ground; consulting with the Department prior to applying any liquid waste to frozen or snow-covered ground; applying wastes at agronomic rates.

Plant sampling/tissue analysis	✓ yes/no	Rotational grazing	yes/no ✓
Conservation or reduced tillage	✓ yes/no	Manure injection or incorporation	✓ yes/no
Terraces or other water control structures	yes/no ✓	Contour plantings	yes/no ✓
Riparian buffers or vegetative filter strips	yes/no ✓	Winter "scavenger" or cover crops	yes/no ✓

Other examples Seasonal crop selection is based on rainfall and soil analysis. A corn and legume hay rotation is utilized to minimize insecticide use.

9. Implementation, Operation, Maintenance and Record Keeping – Guidance

The permittee is required to develop guidance addressing implementation of NMP, proper operation and maintenance of the facility, and record keeping as described in Part II of the permit.

Has a guidance document been developed for the facility? ✓ Yes No

Certify the document addresses the following requirements:

Implementation of the NMP:	✓ Yes	No
Facility operation and maintenance:	✓ Yes	No
Record keeping and reporting:	✓ Yes	No
Sample collection and analysis:	✓ Yes	No
Manure transfer:	✓ Yes	No

Provide name, date and location of most recent documentation:

Solaris Feeders procedural logs since inception. Formal NMP document to be implemented 01/01/09.

All logs, records, analysis and NMP are kept in the Solaris main office.

If your answer to any of the above question is no, provide explanation

Section E – Land Application

Will manure be land applied to land either owned, rented, or leased by the owner or operator of the facility?

No If no, then provide an explanation of how animal waste at this site are managed.

- Yes If yes, then the information requested in Section E must be provided.

Photos and/or Maps

Attach an aerial photograph or map of the site where manure is to be applied. (Use multiple photos/maps if necessary to show required details.) The photo(s)/map(s) must be printed on no larger than an 11"x17" piece of paper, and must clearly identify the following items:

- Individual field boundaries for all planned land application areas
- A name, number, letter or other means of identifying each individual land application field
- The location of any down-gradient surface waters
- The location of any down-gradient open tile line intake structures
- The location of any down-gradient sinkholes
- The location of any down-gradient agricultural well heads
- The location of all conduits to surface waters
- The specific manure/waste handling or nutrient management restrictions associated with each land application field.
- The soil type(s) present and their locations within the individual land application field(s)
- The location of buffers and setbacks around state surface waters, well heads, etc.

Land Application Equipment Calibration

Describe the type of equipment used to land apply wastes and the calibrating procedures:

Manure spreaders are calibrated in accordance with the recommendations of the MSU Extension

Service and DEQ Circular 9

Manure Sampling and Analysis Procedures

A representative manure sample will be analyzed a minimum of once annually for Total Nitrogen, and Total Phosphorus. Analysis results will be reported in lbs/ton or lbs/1,000 gal. Results of these analyses will be used in determining application rates for manure, litter, and process wastewater.

Manure Sample collection will occur according to the following method:

- The recommended method(s) found in Section 5 of Department Circular DEQ 9

Other (describe) _____

Soil Sampling and Analysis Procedures

A representative soil sample from the top 6 inch layer of soil in each field will be analyzed for phosphorus content at least once every five years. Analyses will be conducted by a qualified laboratory, using the Olsen P test. Results will be reported in parts per million (ppm) and will be used in determining application rates for manure, litter, and process wastewater.

Soil sample collection will occur according to the following method:

- The recommended method(s) found in Section 5 of Department Circular DEQ 9

Other (describe) _____

Land Application Data-Narrative approach

The following must be filled out for each field to which manure, litter or process wastewater will or may be applied for the period of the permit (5 years). Use as many sheets as necessary to fulfill this requirement. **Fields with identical crops and soil types may be grouped together.**

Crops and Manure Corn**Field Name and spreadable acres for each (for fields with identical crops and soils type):**

Application rate: not limited. F fields 1,2,3,6,7,10 -206 acre, E&L field -148.78 ac, W1 field 8-28.13 acres

F field 4 - 15.84 ac & W1 field 3 -3.24 acre are in alfalfa and may or may not get switched to corn

Crop 1 (year 1 or ?) plant species	Corn crop for years 1,3,5
Irrigated (Y/N)	Y
Yield Goal (ton/ac or bushel/ac)	25 ton/ac
N Content of soil as nitrate (lbs/acre or ppm)	14 lbs/acre
P Content of soil as P ₂ O ₅ (lbs/acre or ppm)	10 ppm
Time of Year When Application will Occur (month)	spring or fall depending on weather
Application frequency (per year by month)	1-2 times per year as needed
Form of manure (liquid/solid)	solid, may or may not have been composted
Method of Application	Broadcast then disced
Is manure incorporated or broadcast?	Incorporated in spring or fall
Frequency of Application (yearly, biannual, etc.?)	Yearly until P limit and then N limit as needed
Crop 2	NA
Irrigated (Y/N)	
Yield Goal (ton/ac or bushel/ac)	
N Content of soil as Nitrate (lbs/acre or ppm)	
P Content of soil as P ₂ O ₅ (lbs/acre or ppm)	
Time of Year When Application will Occur (month)	
Application frequency (per year, by month)	
Form of manure (liquid/solid)	
Method of Application	
Is manure broadcast, injected or incorporated?	
Frequency of Application (Annual, Biannual, ,etc?)	

Land Application Data-Narrative approach

The following must be filled out for each field to which manure, litter or process wastewater will or may be applied for the period of the permit (5 years). Use as many sheets as necessary to fulfill this requirement. **Fields with identical crops and soil types may be grouped together.**

Crops and Manure

Field Name and spreadable acres for each (for fields with identical crops and soils type):

Application rate: very limited. W1 fields 1,2,6,7 -69 acres W2 fields 2,3,4 -40 acres

W1 field 4 - 19.62 acre is in alfalfa and may or may not get switched to corn

Crop 1 (year 1 or ?) plant species	Corn crop for years 1,3,5
Irrigated (Y/N)	Y
Yield Goal (ton/ac or bushel/ac)	25 ton/ac
N Content of soil as nitrate (lbs/acre or ppm)	14 lbs/acre
P Content of soil as P ₂ O ₅ (lbs/acre or ppm)	10 ppm
Time of Year When Application will Occur (month)	spring or fall depending on weather
Application frequency (per year by month)	1-2 times per year as needed
Form of manure (liquid/solid)	solid, may or may not have been composted
Method of Application	Broadcast then disced
Is manure incorporated or broadcast?	Incorporated in spring or fall
Frequency of Application (yearly, biannual, etc.?)	Yearly until P limit and then N limit as needed
Crop 2	NA
Irrigated (Y/N)	
Yield Goal (ton/ac or bushel/ac)	
N Content of soil as Nitrate (lbs/acre or ppm)	
P Content of soil as P ₂ O ₅ (lbs/acre or ppm)	
Time of Year When Application will Occur (month)	
Application frequency (per year, by month)	
Form of manure (liquid/solid)	
Method of Application	
Is manure broadcast, injected or incorporated?	
Frequency of Application (Annual, Biannual, ,etc?)	

Land Application Data-Narrative approach

The following must be filled out for each field to which manure, litter or process wastewater will or may be applied for the period of the permit (5 years). Use as many sheets as necessary to fulfill this requirement. **Fields with identical crops and soil types may be grouped together.**

Crops and Manure

Field Name and spreadable acres for each (for fields with identical crops and soils type):

Application rate: not limited. F fields 1,2,3,6,7,10 -206 acre, E&L field -148.78 ac, W 1 field 8 -28.13 acres

F field 4 - 15.84 ac & W1 field 3 -3.24 acre are in alfalfa and may or may not get switched to Barley Hay

Crop 1 (year 1 or ?) plant species	Barley Hay for years 2 & 4
Irrigated (Y/N)	Y
Yield Goal (ton/ac or bushel/ac)	3 ton/acre
N Content of soil as nitrate (lbs/acre or ppm)	14 lbs/acre
P Content of soil as P ₂ O ₅ (lbs/acre or ppm)	10 ppm
Time of Year When Application will Occur (month)	spring or fall depending on weather
Application frequency (per year by month)	1-2 times per year as needed
Form of manure (liquid/solid)	solid, may or may not have been composted
Method of Application	Broadcast then disced
Is manure incorporated or broadcast?	Incorporated in spring or fall
Frequency of Application (yearly, biannual, etc.?)	Yearly until P limit and then N limit as needed
Crop 2	NA
Irrigated (Y/N)	
Yield Goal (ton/ac or bushel/ac)	
N Content of soil as Nitrate (lbs/acre or ppm)	
P Content of soil as P ₂ O ₅ (lbs/acre or ppm)	
Time of Year When Application will Occur (month)	
Application frequency (per year, by month)	
Form of manure (liquid/solid)	
Method of Application	
Is manure broadcast, injected or incorporated?	
Frequency of Application (Annual, Biannual, ,etc?)	

Land Application Data-Narrative approach

The following must be filled out for each field to which manure, litter or process wastewater will or may be applied for the period of the permit (5 years). Use as many sheets as necessary to fulfill this requirement. **Fields with identical crops and soil types may be grouped together.**

Crops and Manure

Field Name and spreadable acres for each (for fields with identical crops and soils type):

Application rate: very limited. W1 field 1,2,6,7 -69 acres. W2 fields 2,3,4 - 40 acres

W1 field 4 - 19.62 acres is in alfalfa and may or may not get switched to Barley Hay.

Crop 1 (year 1 or ?) plant species	Barley Hay for years 2 & 4
Irrigated (Y/N)	Y
Yield Goal (ton/ac or bushel/ac)	3 ton/acre
N Content of soil as nitrate (lbs/acre or ppm)	14 lbs/acre
P Content of soil as P ₂ O ₅ (lbs/acre or ppm)	10 ppm
Time of Year When Application will Occur (month)	spring or fall depending on weather
Application frequency (per year by month)	1-2 times per year as needed
Form of manure (liquid/solid)	solid, may or may not have been composted
Method of Application	Broadcast then disced
Is manure incorporated or broadcast?	Incorporated in spring or fall
Frequency of Application (yearly, biannual, etc.?)	Yearly until P limit and then N limit as needed
Crop 2	NA
Irrigated (Y/N)	
Yield Goal (ton/ac or bushel/ac)	
N Content of soil as Nitrate (lbs/acre or ppm)	
P Content of soil as P ₂ O ₅ (lbs/acre or ppm)	
Time of Year When Application will Occur (month)	
Application frequency (per year, by month)	
Form of manure (liquid/solid)	
Method of Application	
Is manure broadcast, injected or incorporated?	
Frequency of Application (Annual, Biannual, ,etc?)	

Land Application Data-Narrative approach

The following must be filled out for each field to which manure, litter or process wastewater will or may be applied for the period of the permit (5 years). Use as many sheets as necessary to fulfill this requirement. **Fields with identical crops and soil types may be grouped together.**

Crops and Manure

Field Name and spreadable acres for each (for fields with identical crops and soils type):

Application rate: not limited. F field 4 -15.84 acre, W1 field 3 -3.24 acres, MP1 fields 4,5 - 20 acres

MP2 fields 1,2,3 -29 acres, MP3 fields 1,2 -23 acres, M5 field 1 - 15.88 acres

Crop 1 (year 1 or ?) plant species	Alfalfa/Grass Hay for years 1,2,3,4,5
Irrigated (Y/N)	Y
Yield Goal (ton/ac or bushel/ac)	1 Ton /acre
N Content of soil as nitrate (lbs/acre or ppm)	14 lbs/acre
P Content of soil as P ₂ O ₅ (lbs/acre or ppm)	10 ppm
Time of Year When Application will Occur (month)	spring or fall depending on weather
Application frequency (per year by month)	1-2 times per year as needed
Form of manure (liquid/solid)	solid, may or may not have been composed
Method of Application	Broadcast then disced
Is manure incorporated or broadcast?	Incorporated in spring or fall
Frequency of Application (yearly, biannual, etc.?)	Yearly until P limit and then N limit as needed
Crop 2	NA
Irrigated (Y/N)	
Yield Goal (ton/ac or bushel/ac)	
N Content of soil as Nitrate (lbs/acre or ppm)	
P Content of soil as P ₂ O ₅ (lbs/acre or ppm)	
Time of Year When Application will Occur (month)	
Application frequency (per year, by month)	
Form of manure (liquid/solid)	
Method of Application	
Is manure broadcast, injected or incorporated?	
Frequency of Application (Annual, Biannual, ,etc?)	

Land Application Data-Narrative approach

The following must be filled out for each field to which manure, litter or process wastewater will or may be applied for the period of the permit (5 years). Use as many sheets as necessary to fulfill this requirement. **Fields with identical crops and soil types may be grouped together.**

Crops and Manure	
Field Name and spreadable acres for each (for fields with identical crops and soils type):	
Application rate: very limited. W1 field 4 -19.62 acres, MP1 fields 1,2,3,6 - 60 acres	
MP2 field 4 -12.81 acres, MP4 fields 1,2,3,4,5,7 -160.87 acres	
Crop 1 (year 1 or ?) plant species	Alfalfa/Grass Hay for years 1,2,3,4,5
Irrigated (Y/N)	Y
Yield Goal (ton/ac or bushel/ac)	1
N Content of soil as nitrate (lbs/acre or ppm)	to be tested before application
P Content of soil as P ₂ O ₅ (lbs/acre or ppm)	to be tested before application
Time of Year When Application will Occur (month)	spring or fall depending on weather
Application frequency (per year by month)	As needed after other fields are spread
Form of manure (liquid/solid)	solid, may or may not have been composted
Method of Application	Broadcast then disced
Is manure incorporated or broadcast?	Incorporated in spring or fall
Frequency of Application (yearly, biannual, etc.?)	Yearly until P limit and then N limit as needed
Crop 2	NA
Irrigated (Y/N)	
Yield Goal (ton/ac or bushel/ac)	
N Content of soil as Nitrate (lbs/acre or ppm)	
P Content of soil as P ₂ O ₅ (lbs/acre or ppm)	
Time of Year When Application will Occur (month)	
Application frequency (per year, by month)	
Form of manure (liquid/solid)	
Method of Application	
Is manure broadcast, injected or incorporated?	
Frequency of Application (Annual, Biannual, etc?)	

Phosphorus Risk Assessment

The permittee shall assess the risk of phosphorus contamination of state waters. An assessment shall be conducted for each field, under the control of the operator, to which manure, litter or process wastewater will or may be applied. If a new field is added in the future, then the permittee must submit a revised (modified) NMP. The permittee has the option of using either Method A or Method B (below) to complete the assessment. Copies of all tables and calculations used to complete the assessments, as well as the results of the assessments, shall be submitted to the Department and copies shall be maintained on-site at the facility and available for Departmental review. The results of the assessments shall be used to determine the appropriate basis for land application of wastes from the facility.

Method Used

Indicate which method will be used to determine phosphorus application:

- ☒ Method A – Representative Soil Sample
☐ Method B – Phosphorus Index

Method A – Representative Soil Sample

- Obtain one or more representative soil sample(s) from the field.
- Have the sample analyzed for Phosphorus by a qualified lab. The "Olsen P test" must be used for the analysis, and the result must be reported in parts per million (ppm).
- Using the results of the Olsen P test, determine the application basis according to the Table below

Soil Test	
<i>Olsen P Soil Test Result (ppm)</i>	<i>Application Basis</i>
<25.0	Nitrogen Needs Of Crop
25.1 - 100.0	Phosphorus Needs Of Crop
100.0 - 150.0	Phosphorus Needs up to Crop Removal Rate
>150.0	No Application

Method B – Phosphorus Index

- Complete a Phosphorus Index according to for each crop grown on each field. Complete table in Appendix A to calculate phosphorus index. For information on filling out specific sections Appendix A, please refer to Attachment 2 of Department Circular DEQ 9.
- Using the calculated Total Phosphorus Index Value, assign the overall site/field vulnerability to phosphorus loss according to the table below.

Total Phosphorus	
<i>Total Phosphorus Index Value</i>	<i>Site Vulnerability to Phosphorus Loss</i>
<11	Low
11-21	Medium
22-43	High
>43	Very High

- Using the calculated Site Vulnerability to Phosphorus Loss, determine the appropriate application basis according to the table below.

Site Vulnerability to Phosphorus Loss	
<i>Site Vulnerability to Phosphorus Loss</i>	<i>Application Basis</i>
Low	Nitrogen Needs
Medium	Nitrogen Needs
High	Phosphorus Need Up to Crop Removal
Very High	Phosphorus Crop Removal or No Application

- d) The permittee will complete the *Nutrient Budget Worksheet*, below, for each crop grown on each field to which manure or process waste water is or may be applied during the first year of application. A copy of each Nutrient Budget Worksheet will be maintained on site, and a copy will be submitted to the Department.

Nutrient Budget Worksheet			
Site/Field: <u>Corn</u>			
Nutrient Budget		Nitrogen-based Application	Phosphorus-based Application
	Crop Nutrient Needs, lbs/acre included in Department Circular DEQ 9	252 lbs/acre	42.5 lbs/acre
(-)	Credits from previous legume crops, lbs/acre (from DEQ-9), as applicable	0	0
(-)	Residuals from past manure production, lbs/acre (lbs/acre applied in previous year(s) x fractions listed in DEQ-9)	0	0
(-)	Nutrients supplied by commercial fertilizer and Biosolids, lbs/acre	0	20.
(-)	Nutrients supplied in irrigation water, lbs/acre	0	0
= Additional Nutrients Needed, lbs/acre			22.5 lbs/acre
Total Nitrogen and Phosphorus in manure, lbs/ton or lbs/1,000 gal (from manure test)		38964*.92=35847tons	14.6p2o5*38964=568874
(x)	Nutrient Availability factor (for Nitrogen based application see DEQ-9, below; for Phosphorus based application use 1.0)		1
= Available Nutrients in Manure, lbs/ton or lbs/1,000 gal		35847	568847 lbs
Additional Nutrients needed, lbs/acre (calculated above)			22.5lbs/acre
(/)	Available Nutrients in Manure, lbs/ton or lbs/1,000 gal (calculated above)		568847
= Manure Application Rate, tons/acre or 1,000 gal/acre			2 tons/acre

Comments:

Per NRCS, 14.6 p2o5= 1 ton manure 2tons per acre=29.2p2o5, 383 acres=766tons to spread
 Corn fields - 383 acres available not including alfalfa. Fields will be spread or utilized between the
 Miles City feedlot or Kinsey Feedlot as determined by weather, accumulation and soil testing.

- d) The permittee will complete the *Nutrient Budget Worksheet*, below, for each crop grown on each field to which manure or process waste water is or may be applied during the first year of application. A copy of each Nutrient Budget Worksheet will be maintained on site, and a copy will be submitted to the Department.

Nutrient Budget Worksheet			
Site/Field: <u>Barley Hay</u>			
Nutrient Budget		Nitrogen-based Application	Phosphorus-based Application
	Crop Nutrient Needs, lbs/acre included in Department Circular DEQ 9	160	25lbs/acre
(-)	Credits from previous legume crops, lbs/acre (from DEQ-9), as applicable	0	0
(-)	Residuals from past manure production, lbs/acre (lbs/acre applied in previous year(s) x fractions listed in DEQ-9)	0	0
(-)	Nutrients supplied by commercial fertilizer and Biosolids, lbs/acre	0	20
(-)	Nutrients supplied in irrigation water, lbs/acre	0	0
	= Additional Nutrients Needed, lbs/acre		5 lbs/acre
	Total Nitrogen and Phosphorus in manure, lbs/ton or lbs/1,000 gal (from manure test)	38964*.92= 35847lbs	14.6p205*38964=568874
(x)	Nutrient Availability factor (for Nitrogen based application see DEQ-9, below; for Phosphorus based application use 1.0)		1
	= Available Nutrients in Manure, lbs/ton or lbs/1,000 gal	35847	568847
	Additional Nutrients needed, lbs/acre (calculated above)		5 lbs/acre
(/)	Available Nutrients in Manure, lbs/ton or lbs/1,000 gal (calculated above)		568847
	= Manure Application Rate, tons/acre or 1,000 gal/acre		.34ton/acre

Comments:

Per NRCS, 14.6 p2o5= 1 ton manure .34tons per acre=4.96p2o5, 383 acres=130tons to spread
 Barley fields 383 acres available not including alfalfa. Fields will be spread or utilized between the
 Miles City feedlot or Kinsey Feedlot as determined by weather, accumulation and soil testing.

Section F - CERTIFICATION**Permittee Information:**

This Form NMP must be completed, signed, and certified as follows:

- For a corporation, by a principal officer of at least the level of vice president;
- For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or
- For a municipality, state, federal, or other public facility, by either a principal executive officer or ranking elected official.

All Permittees Must Complete the Following Certification:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information; including the possibility of fine and imprisonment for knowing violations. [75-5-633, MCA]

A. Name (Type or Print)

William J. Krutzfeldt

B. Title (Type or Print)

Member Agent

C. Phone No.

406-234-0200

D. Signature

William J. Krutzfeldt by:
Robert D. Moore

E. Date Signed

1/30/09

Return the Form NMP, Nutrient Management Plan to:

Department of Environmental Quality
Water Protection Bureau
PO Box 200901
Helena, MT 59620-0901
(406) 444-3080

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FEB 03 2009
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PERMITTING & COMPLIANCE DIV.

Agricultural Disposal of Manure, Food-Processing Waste, and Sewage Sludge

Custer County Area, Montana

[Onsite investigation may be needed to validate the interpretations in this table and to confirm the identity of the soil on a given site. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. The table shows only the top five limitations for any given soil. The soil may have additional limitations]

Map symbol and soil name	Pct. of map unit	Application of manure and food-processing waste		Application of sewage sludge	
		Rating class and limiting features	Value	Rating class and limiting features	Value
47A: Harlake	85	Very limited Slow water movement Sodium content	1.00 0.32	Very limited Slow water movement Sodium content	1.00 0.32
79A: Yamacall	85	Not limited		Not limited	
489A: Spinekop	85	Somewhat limited Slow water movement	0.30	Somewhat limited Slow water movement	0.22
621B: Marvan	50	Very limited Slow water movement Sodium content Runoff	1.00 0.68 0.40	Very limited Slow water movement Sodium content	1.00 0.68
Vanda	35	Very limited Slow water movement Sodium content Runoff Salinity	1.00 1.00 0.40 0.01	Very limited Slow water movement Sodium content Salinity	1.00 1.00 0.13
781A: Vanda	85	Very limited Slow water movement Salinity Sodium content Depth to saturated zone Droughty	1.00 1.00 1.00 0.95 0.91	Very limited Slow water movement Salinity Sodium content Depth to saturated zone Droughty	1.00 1.00 1.00 0.95 0.91

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Map symbol and soil name	Pct. of map unit	Application of manure and food-processing waste		Application of sewage sludge	
		Rating class and limiting features	Value	Rating class and limiting features	Value
77A: Big sandy	40	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Flooding	1.00	Flooding	1.00
		Sodium content	0.68	Sodium content	0.68
		Runoff	0.40	Slow water movement	0.22
		Slow water movement	0.30		
79A: Yamacall	85	Not limited		Not limited	
486A: Glendive	50	Not limited		Not limited	
Havra	40	Not limited		Not limited	

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Map symbol and soil name	Pct. of map unit	Application of manure and food-processing waste		Application of sewage sludge	
		Rating class and limiting features	Value	Rating class and limiting features	Value
27A: Busby	85	Not limited		Not limited	
31A: Ryell	85	Very limited Filtering capacity Droughty	0.99 0.02	Very limited Filtering capacity Flooding Droughty	0.99 0.40 0.02
33A: Chanta	85	Very limited Filtering capacity Droughty	0.99 0.01	Very limited Filtering capacity Droughty	0.99 0.01
45A: Glendive	85	Not limited		Not limited	
53A: Kobase	85	Very limited Slow water movement Sodium content	1.00 0.50	Very limited Slow water movement Sodium content	1.00 0.50
57A: Lonna	85	Somewhat limited Sodium content Salinity	0.32 0.01	Somewhat limited Sodium content	0.32
61A: Marias	85	Very limited Slow water movement Runoff	1.00 0.40	Very limited Slow water movement	1.00
77A: Havre	50	Very limited Flooding	1.00	Very limited Flooding	1.00



1 inch equals 330 feet

Solo's Fashions, LLC
MT 6010174